CHARGE NUMBER: 1716

PROJECT TITLE: Tobacco Microstructure

PROJECT LEADER: Mary Ellen Counts

PERIOD COVERED: July 1-31, 1980

DATE OF REPORT: August 1, 1980

I. TOBACCO RESEARCH

An extensive microstructural investigation was coordinated (Projects 1716 and 1901) for another "thin" vs "bodied" expansion study to examine the relationship between relative stalk position, epidermal cell size, and the "CV potential" of different grades of flue-cured bright and burley tobaccos. Generally, the largest average epidermal cell sizes were observed within the "thin" (lower stalk) grades for both bright and burley tobacco. It was anticipated from these data that the "thin" tobaccos of burley and bright would be found to have generally higher CVs than those of the "bodied" tobaccos. Cylinder volume data have not been received to date. Details of the microstructure analyses data are found in a memo of July 21, 1980 (I. L. Uydess and the Microstructure Analysis Laboratory).

A cooperative effort is in progress with Project 2106 involving heat treatment of RL. Preliminary studies on the relation between RH, OV, and CV of extracted RL will evolve into kinetic studies of RL heat treatment to determine the tobacco components contributing to cross-linking.

An initial investigation of morphological and chemical characteristics of flue-cured tobacco was completed and a special report on this subject is in preparation.

II. MISCELLANEOUS

Several requests were made for Microstructure assistance during this period. Included were:

-Assistance was given to the City of Richmond Bureau of Air Pollution with energy dispersive x-ray analysis and scanning electron microscopic examination of collected air particulates.

-Image analysis was used in a cuts per inch study evaluation with Project 1005. It was also used in determining the size distribution of charcoal material used in tobacco/charcoal separation studies (Project 1307).

-SEM, EDS, and optical microscopy were used in analyses of scrubber residues from Pilot Plant CO expansion process gas scrubbers (Project 8204).

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-The only crystalline component found in samples of material from the crystallizer of the denitrification process at Park 500 was potassium nitrate.

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